

REMARKS

Status of Claims:

Claims 2-4, 6-8, 10-12, 14-16, 18-20, and 22-23 are cancelled. New claims 24-26 are added. Thus, claims 1, 5, 9, 13, 17, 21, and 24-26 are present for examination.

Specification:

The specification has been amended to correct some minor informalities.

Indefiniteness Rejection:

Claims 1, 9, and 17 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The Examiner stated that, “[claims] 1, 9, and 17, respectively recite the term, ‘error sound’”, and that, “[e]ven though ‘error sound’ has been disclosed in the specification, a detailed explanation of what is meant by an error sound as it relates to volume control has not been provided.”

Claims 1, 9, and 17 have been amended, and they no longer recite the term “error sound”. Thus, the rejection is moot.

Obviousness Rejections:

Claims 1, 5, 9, 13, 17, and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fado et al. (U.S. Patent Number 6,016,136) (hereinafter Fado) in view of Rothschild et al. (U.S. Patent Number 5,487,102) (hereinafter Rothschild).

Claims 2, 10, and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fado and Rothschild in view of Hetherington.

Claims 2, 10, and 18 have been cancelled. With respect to claims 1, 5, 9, 13, 17, and 21, the rejections are respectfully traversed.

Independent claim 1, as amended, recites a sound volume adjustment system for a personal computer, said personal computer having a sound device, the system comprising:

“a memory resident on the personal computer in which a plurality of sound volume adjustment coefficients are stored, each of the plurality of sound volume adjustment coefficients corresponding to a respective one of a plurality of software applications;

an operating system resident on the personal computer; and

sound volume adjustment control means resident on the personal computer for adjusting, based on said plurality of sound volume adjustment coefficients, sound volume data for each application of the plurality of software applications, and for transferring the adjusted sound volume data to the operating system,

wherein said sound volume adjustment control means adjusts said sound volume data for each application of the plurality of software applications by multiplying said sound volume data for each application by a corresponding one of said plurality of sound volume adjustment coefficients; and

wherein each of the plurality of sound volume adjustment coefficients are **set as multiples of** a variable level of a sound volume of a system sound generated by said operating system, said variable level of said sound volume of said system sound being **unchanged** when an application of the plurality of software applications requests the operating system to open the sound device.” (Emphasis Added).

A sound volume adjustment system including the above-quoted features has the advantage that a sound volume adjustment control means for adjusting can adjust sound volume data for each of a plurality of software applications by multiplying the sound volume data for each application by a corresponding sound volume adjustment coefficient. In addition, each of the sound volume adjustment coefficients are **set as multiples of** a variable level of a sound volume of a system sound generated by an operating system. Also, the variable level of the sound volume of the system sound is **unchanged** when an application requests the operating system to open a sound device. (Specification; page 4, line 9 to page 6, line 7; page 17, line 12 to page 19, line 17; FIG. 2).

Such a sound volume adjustment system allows for sound data for each application to be reproduced at an appropriate level, and provides for an easy sound volume adjustment

operation. Since the sound volume adjustment coefficients are set as multiples of a variable level of a sound volume of a system sound and the variable level of the sound volume of the system sound is unchanged when an application requests the operating system to open the sound device, the sound volume adjustment system allows for preventing such a situation in which a warning sound from the operating system is too loud or too weak compared to an application sound volume. (Specification; page 4, line 9 to page 6, line 7).

For example, if a sound volume of the sound volume data of an application is originally set to be smaller than that of a warning sound, the sound volume coefficient corresponding to the application may be set to have a value larger than “1” in order to increase a volume of a sound reproduced based on the sound volume data having been adjusted up to a level equivalent to that of the warning sound. On the other hand, when the sound volume of the sound data is originally set to be larger than that of the warning sound, the sound volume coefficient may be set to have a value smaller than “1” in order to decrease the reproduced sound volume based on the sound volume data having been adjusted down to a level equivalent to that of the warning sound. (Specification; page 15, lines 11-24).

Neither Fado, Rothschild, nor Hetherington, alone or in combination, disclose or suggest a sound volume adjustment system including the above-quoted features where a plurality of sound volume adjustment coefficients are set as multiples of a variable level of a sound volume of a system sound and the variable level of the sound volume of the system sound is unchanged when an application requests an operating system to open a sound device.

The Examiner stated that, “Fado fails to specifically disclose an adjustment of volume in respect to a system sound”. Indeed, in order to specify a volume setting for a headset or a speaker, the Wizard tool of Fado requires that a master volume control of a sound card be adjusted to a maximum value. Thus, Fado states that:

“At the same time, the tool will be gathering information by querying the audio device driver for the sound card capabilities, setting up audio mixer controls and identifying all sound cards in the computer system and determining which of those sound cards, if any, is compatible with the application. Prior to the welcome step, or during part of the time the welcoming step is undertaken, the audio mixer is initially configured in

accordance with step of block 8. **Without any interface with the user**, and depending on the type of audio mixer, the tool deselects or mutes the microphone playback mixer control and all recording mixer controls other than the master and microphone controls. **The tool then adjusts both the master** and microphone volume controls to **maximum**. This is the starting point for the various tests which follow.” (Emphasis Added) (Fado; column 6, lines 17-31).

With the master volume control set to **maximum**, the Wizard tool of Fado then allows for a user to set a **waveout volume** for a headset or speaker. The Wizard tool of Fado then saves the setting for the waveout volume in a registry entry for the application. (Fado; column 14, lines 7-13). Thus, the setting for a desired waveout volume of the headset or speaker in the system of Fado that is stored in a **registry** is only valid when the master volume control is set to a **maximum** value. As stated in Fado:

“**Unseen to the user**, the tool adjusts the **master volume** to **maximum**, makes sure that the waveout is not muted and **sets the waveout volume** to either the value in a **Play Level registry entry** of the application or the current waveout mixer volume control, if the registry entry is corrupted.” (Emphasis Added) (Fado; column 9, lines 19-23).

Thus, when a user sets a desired volume level of a headset or a speaker, the volume level is set as a waveout volume with the master volume control set at a **maximum** value. As a result, when a speech recognition program is executed with the volume settings set according to the Wizard tool in Fado, the master volume control is **changed** from an initial setting to a **maximum** value without any input from the user. Setting the master volume control to a maximum value will **increase** the sound of a **system sound**, such as a **warning sound**, from the operating system to a level not set by the user.

For example, if a user of a computer has set a master volume control so that a warning sound from an operating system is at a **desired** level, the setting of the master volume control will be **reset** to a **maximum** level, without user input, when the Wizard tool of Fado is executed. Also, in order to realize the **desired** sound level set by the Wizard tool in Fado, the master volume control will have to be reset to a **maximum** level each time the speech recognition application of Fado opens a sound device, because the waveout volume stored in the registry is based on the master volume control being set at a maximum value. As a

consequence, the sound level of the warning sound from the operating system will be increased each time the application in Fado opens a sound device, and will be at a level higher than that desired by the user.

A sound volume adjustment system including the above-quoted features is designed to address such a problem by leaving a variable level of a sound volume of a system sound unchanged when an application requests an operating system to open a sound device. Also, sound volume coefficients corresponding to each application are set as multiples of the variable level of the sound volume of the system sound, which allows for preventing such a situation in which a warning sound from the operating system is too loud or too weak compared to an application sound volume.

The Rothschild reference does not cure the defects with respect to the teaching of Fado. The Examiner points to the default volume level of Rothschild as specifying a system sound. However, the system of Rothschild is only used for answering calls on a telephone network, and the default volume level of Rothschild only refers to the simple operation of setting a receive level and an echo level to a default receive volume level each time a call is completed. (Rothschild; column 6, lines 45-55). In the system of Rothschild, there is no operating system that provides separate sounds from software applications and, thus, the Rothschild reference provides no basis for classifying a sound as a system sound as opposed to sound volume data for an application. As a result, the system of Rothschild also does not allow for adjusting sound volume data for applications based on sound volume adjustment coefficients that are set as multiples of a variable level of a sound volume of a system sound generated by an operating system. In addition, the default volume of Rothschild cannot be indicative of a system sound, because a volume is not a sound, but is a setting of a level of a sound.

Furthermore, the Hetherington reference does not cure the defects with respect to the teachings of Fado and Rothschild. The Hetherington reference also does not allow for scaling sound volume data from applications based on sound volume adjustment coefficients that are set as multiples of a variable level of a sound volume of a system sound generated by an operating system. Rather, the scaling in Heatherington simply corresponds to the logarithmic

nature of audio perceptions, and the scaling has no relation to a variable level of sound volume of a system sound. (Heatherington; column 1, lines 50-60). The scale in the system of Heatherington only allows for converting a linear change in volume to a logarithmic change in volume, and the scaling values are not set with reference to a variable level of a sound volume of a system sound. (Heatherington; abstract; column 1, lines 61-67; column 4, lines 35-54; column 5, line 3 to column 8, line 60; column 9, lines 27-37).

Therefore, independent claim 1, as amended, is neither disclosed nor suggested by the cited prior art and, hence, is believed to be allowable. The Patent Office has not made out a *prima facie* case of obviousness under 35 U.S.C. 103.

Independent claim 9, as amended, recites a sound volume adjustment method with features similar to features of a sound volume adjustment system of independent claim 1. Therefore, independent claim 9 is believed to be allowable for at least the same reasons that claim 1 is believed to be allowable.

Independent claim 17, as amended, recites a computer readable memory storing a sound volume adjustment program with features similar to features of a sound volume adjustment system of independent claim 1. Therefore, independent claim 17 is believed to be allowable for at least the same reasons that claim 1 is believed to be allowable.

The dependent claims are deemed allowable for at least the same reasons indicated above with regard to the independent claims from which they depend.

Conclusion:

Applicant believes that the present application is now in condition for allowance. Favorable reconsideration of the application as amended is respectfully requested.

The Examiner is invited to contact the undersigned by telephone if it is felt that a telephone interview would advance the prosecution of the present application.

The Commissioner is hereby authorized to charge any additional fees which may be required regarding this application under 37 C.F.R. §§ 1.16-1.17, or credit any overpayment,

to Deposit Account No. 19-0741. Should no proper payment be enclosed herewith, as by a check being in the wrong amount, unsigned, post-dated, otherwise improper or informal or even entirely missing, the Commissioner is authorized to charge the unpaid amount to Deposit Account No. 19-0741.

If any extensions of time are needed for timely acceptance of papers submitted herewith, Applicant hereby petitions for such extension under 37 C.F.R. §1.136 and authorizes payment of any such extensions fees to Deposit Account No. 19-0741.

Respectfully submitted,

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